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PART II

DEPARTMENT OF THE INTERIOR

Geological Survey

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FINALIZED NORTH ATLANTIC OUTER CONTINENTAL SHELF (OCS) AREA ORDER NOS. 2, 5, 7 AND 12

[4310-31]

DEPARTMENT OF THE INTERIOR

Geological Survey

FINALIZED NORTH ATLANTIC AREA ORDERS NOS. 2, 5, 7, 12

Approved Issuance

Notice is hereby given that, pursuant to Title 30 CFR, Part 250.11, the Acting Chief, Conservation Division, U.S. Geological Survey, has approved the issuance of the finalized North Atlantic Outer Continental Shelf (OCS) Area Order Nos. 2, 5, 7, and 12 as set fortn below. These Orders will be effective on January 1, 1978.

A Notice was published in the FEDERAL REGISTER on July 22, 1976, Vol. 41, No. 142, stating that the existing Mid-Atlantic OCS Orders were draft North Atlantic OCS Area Orders, and public comments were solicited. For the purposes of these Orders, the North Atlantic Area shall include those lands subject to Federal oil and gas leasing on the OCS between 40° N. and 42° N. latitude.

The final revisions to these Orders have been made as a result of a substantive review of these Orders. Paragraphs now incorporate the decimal numbering system and have been reorganized for clarity. All comments have been reviewed, and appropriate suggestions have been included in these finalized Orders.

Comments were received from the following organizations:

Amoco, Inc.
California State Lands Commission
Chevron Oil Co.
Conservation Law Foundation of New England, Inc.
Continental Oil Co.
Environmental Protection Agency
Exxon Company, U.S.A.
Gulf Energy and Minerals Co.—U.S.
Mobile Oil Corp.
Offshore Operators Committee
Shell Oil Co.
Skelly Oil Co.
State of Maine
State of Massachusetts

We have published below a summary of the comments received, our rationale for accepting or rejecting the suggestions of the commenters, and the final version of the Orders.

For further information, contact Mr. George Brown, Eastern Region Conservation Manager, Conservation Division, U.S. Geological Survey, 1725 K Street NW., Washington, D.C. 20006, 202-254-7870. The primary authors of this document are Mr. Dwayne E. Hull and Mr. Larry Ake of the Atlantic Area Office.

Copies of the finalized North Atlantic OCS Area Orders and the U.S. Geological Survey OCS Standards, which are referenced in Order No. 2, are available from:

Conservation Manager, Eastern Region, U.S. Geological Survey, 1725 K Street NW., Washington, D.C. 20006.

NOTE.—1. It has been determined that this document does not contain a major proposal requiring preparation of an Inflationary Impact Statement under Executive Order 11821 and OMB Circular A-107.

2. It has also been determined that issuance of these North Atlantic Orders is not a major Federal action significantly affecting the quality of the human environment under the National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq. One of the primary functions of the Orders is the mitigation of potential environmental impacts. The manner in which this is accomplished is discussed in the Final Environmental Statement for OCS Sale No. 42, North Atlantic Area. The North Atlantic Orders are based on similar Orders for other OCS areas. All modifications are designed to incorporate technological advances and improvements and regulator changes. No revisions have been made which would lessen the Orders' mitigatory impact.

W. A. RADLINSKI,
Acting Director.

SUMMARY OF COMMENTS, USGS RATIONALES, AND FINAL NORTH ATLANTIC ORDER NOS. 2, 5, 7, AND 12

NORTH ATLANTIC OCS ORDER NO. 2

Paragraph 1. *Drilling Platforms and Vessels.* This paragraph was reorganized to separate the requirements for platforms from those for mobile drilling units.

It was suggested that, for clarity, the term "mobile drilling units" be used rather than vessels. This was done as it also conforms with the wording used in a Memorandum of Understanding between the Department of the Interior and the Department of Transportation.

A commenter suggested that a requirement for a site survey of the planned drilling location be added. Although this is standard USGS procedure, no mention has been made of this requirment in the Orders. Therefore, subparagraph 1.1.3, "Well Site Surveys," was added to the Order.

A recommendation was made that the Order include a description of the worst anticipated oceanographic, meteorologic, and seismic conditions to be expected in the North Arlantic Area. This was rejected as the Orders are not an appropriate place to list parameters which will change as more data is gathered.

It was suggested that the type and amount of oceanographic, meterological, and performance data to be collected be specified in the Order. The Order now reflects that these requirements will be set by the Supervisor.

Several commenters suggested that the United States Geological Survey (USGS) require an American Bureau of Shipping Classification or U.S. Coast Guard Certificate of Inspection for mobile drilling units. This comment was adopted as both of these items are based on similar criteria of design and construction.

One commenter recommended that the USGS stay abreast of U.S. Coast Guard regulations and intentions so that there would be no duplication or conflict of regulations. The USGS and U.S. Coast Guard are working together on OCS regulations and have recently published a Memorandum of Understanding regarding the regulation of mobile drilling units.

A recommendation was made that the wording of the Order be changed to indicate the USGS predrilling inspection of the platform or unit would pertain only to drilling equipment. Rather than list the items to be inspected, the Order will remain general. More specific information can be found in the Memorandum of Understanding between the USGS and U.S. Coast Guard regarding mobile drilling units.

Several commenters suggested that once a mobile drilling unit had been approved for use in an Area, it need not be reapproved for subsequent work in the same Area. A sentence was added to subparagraph 1.2 which will normally prevent the operator from having to resubmit rig drawings, specifications, and performance data.

Paragraph 2. *Well Casing and Cementing.* One commenter suggested that if there were indications of improper cementing, a cement bond log should be run to aid in planning the remedial action. Then, after remedial cementing had been accomplished, a second cement bond log should be run. The Order was not revised. The Order is intended to allow the operator and the Supervisor flexibility in dealing with cases of improper cementing. The type of log to be run was not specified due to the interpretive nature of these logs. The operator has the option of running a log or a survey before attempting the repairs.

A suggestion was made that the sentence requiring casing to conform to the specifications contained in API Specification 5A be altered since Specification 5A lists only four API-acceptable grades of casing. The Order was revised to conform to the suggestions. Casing must still meet the quality of API Standards.

It was suggested by one commenter that both conductor and surface casing be solidly cemented to the ocean floor. The Order was revised to make conductor-casing cementing requirements more rigid. Provisions for the cementing of surface casing will remain the same, however. Placing surface-casing cement a minimum of 60 meters into the conductor casing will provide adequate protection and safety.

This commenter further suggested that both the intermediate and pro-

duction casing be cemented a minimum of 1200 feet into the next larger casing string. The Order was not revised. The Order currently requires that a quantity of cement be used which will cover and isolate all hydrocarbon-bearing zones and all abnormal-pressure intervals. By reviewing the available data, the Supervisor can determine the quantity of cement needed to safely cement the well.

A reduction in the allowed casing-setting depths was recommended by one commenter. The comment was justified by the use of average-fracture and pore-pressure gradients to show that setting depths, more in line with those of the Pacific Area, were called for. The Order was not revised. As presently written, the Order makes it clear that the Supervisor has the authority to prescribe casing-setting depths and to require documentation explaining any proposed casing string. Pacific Area casing limitations are based, in part, on shallow faults and shallow reserviors.

Another comment suggested that cement shall not be drilled out until the bottom 500' of annular cement fill has sufficient time to reach a compressive strength of 500 psi. This revision was added to the Order.

Paragraph 3. *Directional Surveys.* Several commenters suggested that an average of 3 be the limiting deviation for a vertical well and that directional surveys be taken every 1,000' rather than 500'. The Order was not revised. These two requirements provide a closer control on the location of the bottom of the well. We believe that in a frontier drilling area, this closer control is justified.

Paragraph 6. *Blowout-Prevention Equipment.* Several commenters stated that this paragraph on blowout-prevention equipment was poorly written and was subject to different interpretations. The Order was revised. Tabulations were added to the Order to clarify the requirements for surface- and subsurface-BOP stacks.

In response to a comment, the subparagraph on BOP accumulators was rewritten to make it clear that the backup system must have a source of power independent from the primary system.

A variety of commenters disagreed with the USGS requirements for the types and the placement of chokes in a choke manifold. The Order was revised to refer to the API Recommended Practice No. 53 on choke-manifold equipment.

Subparagraph 4.1.3, "Subfreezing Operations," was added to the Order because of the severe climate of the North Atlantic Area.

A commenter disagreed with the practice of allowing the choke and kill lines to be used for diversion when the blowout preventer is on the ocean floor. The requirement has been modified to allow the use of the choke and kill lines for diversion, only when specifically approved by the Supervisor.

A recommendation was made that a safety program be developed and included in the Order for drilling the conductor hole, running and cementing the conductor and surface casing when the drilling riser is removed, and pilot-hole drilling in shallow formations. The Order was not revised. A pilot hole is currently required for drilling to conductor setting depth in exploratory wells. When drilling from a mobile unit and the formation competency is inadequate to permit the circulation of drilling fluids from the structural casing setting depth, a safety-procedure program must be submitted to the Supervisor. Problems have not surfaced in the areas of running and cementing conductor and surface casing when the riser is removed.

Several commenters pointed out that the Order required that all seismic data gathered be made available to the Supervisor with the Application for Permit to Drill. This was changed so that only seismic data relating to shallow hazards need be submitted.

A commenter disagreed with the minimum BOP requirement on the conductor casing. A suggestion was made that the BOP requirements for surface casing be applied at depths below 1,500'. The Order was not revised. When drilling from the conductor casing shoe to the surface casing setting depth, it would be useless to require a blowout-preventer stack which was rated for pressures significantly higher than the internal yield point of the conductor casing.

One commenter noted that the proposed Order referred to the "working pressure of the casing" when specifying the pressure at which to test blowout preventers. Since this terminology is not used by industry, the Order has been reworded to refer to minimum internal yield.

A suggestion was made that subsea blowout-preventer stacks carry a minimum of two annular and four ram-type preventers. Since history has not shown a need for this added requirement, the Order was not revised.

One commenter suggested that during BOP pressure tests, the BOP's be tested at low pressures of 200-300 psi. This requirement has been added to detect low-pressure leaks.

Daily visual inspection of the marine riser and blowout preventers was suggested by one commenter. Subparagraph 4.8 was added to the Order to require daily visual inspection and maintenance in accordance with the manufacturer's recommended procedures.

One commenter suggested that BOP drills be conducted daily for each drilling crew until each member is proficient in his emergency duties. The Order was not changed substantially. Requiring daily BOP drills, until each crew member becomes proficient, would be a very subjective requirement. The wording of subparagraph 4.9, "Drills," was altered to remove the impression that weekly drills are always sufficient.

Paragraph 5. *Mud Program.* Many comments were received which pointed out that the mud-storage requirements in the proposed Order were excessive. The Order was revised to make the mud-storage and the inventory requirements more realistic and flexible while still maintaining adequate safety.

One commenter suggested that all mud systems should be equipped with a mud-gas separator for handling gas-cut and for safely venting the gas away from the rig or facility. The Order has been changed, and a mud-gas separator will be required.

Paragraph 6. *Supervision, Surveillance, and Training.* One commenter stated that a reference to future training standards for all members of the drilling crew would be placed in a separate subparagraph rather than in C(2), "Well Control Methods and Procedures." This sentence was deleted during the reorganization of this paragraph, and a reference was made to the U.S. Geological Survey Outer Continental Shelf Standard No. T 1 entitled "Training and Qualifications of Personnel in Well-Control Equipment and Techniques for Drilling on Offshore Locations."

A comment was made that this paragraph should make USGS inspections of drilling facilities mandatory. This was rejected since it was directed at internal USGS policy and would not properly be included in an OCS Order.

Paragraph 8. *Critical Operations & Curtailment Plans.* Several commenters expressed the opinion that this paragraph should not be included in the final Order. They stated that such plans would be voluminous and would restrict the flexibility of onsite personnel. Other commenters felt that this paragraph needed extensive revision. The Order was not changed. The requirement for submission of documented critical operations and curtailment plans were made a part of the Order in order to insure adequate planning on the operator's part and to provide the Supervisor with the necessary information to assist and coordinate emergency actions.

It was suggested that the following should be added to the list of factors in developing curtailment plans:

(1) Spawning times and locations.

(2) Migratory patterns of wildlife.

(3) Seasonal trajectory patterns for oil spills.

(4) Existence of endangered species.

(5) Areas of special biological significance.

The Order was not revised. Curtailment of operations will be required when physical conditions magnify the possibility of an accident occurring during a critical operation. A new requirement has been placed in North Atlantic OCS Order No. 7 to require operators to include provisions taken to protect biologically-sensitive areas in their Oil-Spill Contingency Plans.

A commenter suggested that the removal of subsurface-safety valves (SSSV) be added to the list of critical operations. This was not done since Critical Operations and Curtailment Plans are required only for operations conducted during drilling. Subsurface-safety valves are production-oriented safety systems. Flowing wells may not be left unattended when the SSSV is removed.

Several of the comments received were very general in nature or did not seem applicable to this Order No. 2. One suggestion was that the language of the Order be clarified to state that all equipment employed in the operations must be capable of performing in a manner consistent with all established biological and resource standards. The Order was not revised because it was felt that no such clarification was needed. Other comments suggested ensuring that temporary or permanent abandonments do not become sea-floor obstacles. These subjects are covered adequately in National OCS Order No. 1.

DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, CONSERVATION DIVISION

EASTERN REGION, ATLANTIC AREA, AND NORTH ATLANTIC

OCS Order No. 2 Effective January 1, 1978

Drilling Procedures

This Order is established pursuant to the authority prescribed in 30 CFR 250.11. All exploratory and development wells drilled for oil and gas shall be drilled in accordance with 30 CFR 250.34, 250.41, 250.91, and the provisions of this Order which shall continue in effect until field drilling rules are issued. When sufficient geologic and engineering information is obtained through exploratory drilling, operators may make application or the Supervisor may require an application for the establishment of field drilling rules. After field drilling rules have been established by the Supervisor, development wells shall be drilled in accordance with such rules.

All wells drilled under the provisions of this Order shall have been included in an exploratory or development plan for the lease as required under 30 CFR 250.34. All applications for approval under the provisions of this Order shall be submitted to the appropriate District Supervisor. Each Application for Permit to Drill (Form 9-331C) shall include all information required under 30 CFR 250.91 and shall include a notation of any proposed departures from the requirements of this Order. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. *Drilling Platforms and Mobile Drilling Units.*

1.1 *General Requirements for Fixed and Mobile Drilling Units.* The requirements applicable to fixed and mobile drilling units are contained in subparagraphs 1.1.1 through 1.1.6.

1.1.1 *Fitness of Drilling Unit.* All drilling platforms and mobile drilling units shall be capable of withstanding the oceanographic and meteorological conditions for the proposed area of operations. The operator shall furnish evidence of the fitness of the drilling platform or mobile drilling unit to perform the planned drilling operation.

1.1.2 *Pre-Drilling Inspection.* Prior to commencing operations in an OCS area, all drilling platforms and mobile drilling units shall be given a complete inspection by the Area Supervisor to insure compliance with OCS Orders and Regulations.

1.1.3 *Well-Site Surveys.* Operators or lessees shall conduct a shallow geological hazards survey, and other surveys as required by the Supervisor, and furnish the District Supervisor with the results of the survey(s) of the proposed well site, prior to the approval of drilling operations.

1.1.4 *Drawings, Specifications, Performance Data.* Drawings, specifications, and performance data of all drilling equipment, drilling safety systems, and pollution-prevention equipment associated with the drilling operation, and a schematic of the mobile drilling unit, should be submitted to the District Supervisor.

1.1.5 *Oceanographic, Meteorological, Performance Data.* Operators shall collect and report oceanographic, meteorological, and performance data during the period of operations as required by the Supervisor.

1.1.6 *Subfreezing Operations.* Operators shall furnish evidence that the drilling equipment, drilling safety systems, and other associated equipment are conditioned to assure proper operation under subfreezing conditions where operations will take place over winter months in areas which experience these conditions.

1.2 *Mobile Drilling Units.* Applications for drilling from mobile drilling units shall include the following:

a. Maximum environmental design criteria, operational criteria, and a critical operations plan as described in paragraph 8 of this Order.

b. Anticipated maximum wave height, wind, and current values expected to be encountered based on an average recurrence interval of 100 years.

c. Current American Bureau of Shipping Classification or U.S. Coast Guard Certification of Inspection with operational limitations.

Unless required by the Supervisor, after a mobile drilling unit has been approved for use in an area, the information detailed in 1.1.4 above need not be resubmitted unless there are changes in equipment or performance data.

1.3 *Fixed Drilling Platforms.* Applications for placement of fixed drilling platforms or structures shall be submitted in accordance with OCS Order No. 8.

2. *Well Casing and Cementing.* All wells shall be cased and cemented in accordance with the requirements of 30 CFR 250.41(a)(1). The Application for Permit to Drill shall include the casing design safety factors for collapse, tension, and burst. In cases where cement has filed the annular space back to the ocean floor, the cement may be washed out or displaced to a depth not exceeding 12 meters (39 feet) below the ocean floor to facilitate casing removal upon well abandonment. For the purpose of this Order, the several casing strings in order of normal installation are drive or structural, conductor, surface, intermediate, and production casing.

For the surface, intermediate, and production casing strings, if there are indications of improper cementing such as lost returns, cement channeling, or mechanical failure of equipment, the operator shall recement or make the necessary repairs and run a temperature or cement bond log to verify that the casing has been adequately cemented.

The design criteria for all wells shall consider all pertinent factors for well control, including formation fracture gradients and pressures and casing setting depths. The Operator shall utilize appropriate drilling technology and state-of-the-art methods, such as drilling-rate evaluation, shale density analysis, or other appropriate methods in order to enhance the evaluation of conditions of abnormal pressure, and to minimize the potential for the well to develop a flow or kick.

All casing, except drive pipe or structural casing, shall be new pipe which meets American Petroleum Institute (API) quality standards or reconditioned use pipe that has been tested to insure that it will meet API quality standards for new pipe.

2.1 *Drive or Structural Casing.* This casing shall be set by drilling, driving, or jetting to a minimum depth of 30 meters (98 feet) below the ocean floor or to such greater depth, approved by the District Supervisor, required to support unconsolidated deposits and to provide hole stability for initial drilling operations. If this portion of the hole is drilled, the drilling fluid shall be of a type that is in compliance with the liquid disposal requirements of OCS Order No. 7, and a quantity of cement sufficient to fill the annular space back to the ocean floor shall be used.

2.2 *Conductor and Surface Casing Cementing Requirements.* These casing strings shall be cemented as follows:

2.2.1 *Conductor Casing.* This casing shall be cemented with a quantity of cement sufficient to fill the calculated space back to the ocean floor. Cement fill to the ocean floor shall be verified by the observation of cement returns. In the event that observation of cement returns is not feasible or possible, an excess volume of cement shall be used to assure fill to the ocean floor. The excess volume shall be approved by the District Supervisor.

2.2.2 *Surface Casing.* This casing shall be cemented with a quantity of cement sufficient to protect all freshwater sands and provide well control until the next string of casing is set and sufficient to fill the calculated annular space to at least 60 meters (197 feet) inside the conductor casing or as approved by the District Supervisor. After drilling a maximum of 30 meters (98 feet) below the surface casing shoe, a pressure test shall be obtained to aid in determining a formation fracture gradient either by testing to formation leak-off or by testing to a predetermined equivalent mud weight. The results of this test and any subsequent tests of the formation shall be recorded on the driller's log and used to determine the depth and maximum mud weight of the intermediate hole.

2.2.3 *Conductor and Surface Casing Setting Depths.* Casing design and setting depths shall be based upon all engineering and geologic factors including the presence or absence of hydrocarbons or other potential hazards and water depths. These strings of casing shall be set at the depth specified below subject to approved variation to permit the casing to be set in a competent bed or through formations determined desirable to be isolated from the well by pipe for safer drilling operations; provided, however, that the conductor casing shall be set immediately prior to drilling into formations known to contain oil or gas, or, if unknown, upon encountering such formations.

These casing strings shall be run and cemented prior to drilling below the specified setting depths. For those wells which may encounter abnormal pressure or conditions and for the initial wells in an area, the District Supervisor may prescribe the exact setting depths. Conductor casing setting depths shall be between 91 meters (298 feet) and 305 meters (1,000 feet) TVD below ocean floor, and surface casing setting depths shall be between 305 meters (1,000 feet) and 1,400 meters (4,592 feet) TVD below ocean floor.

Engineering, geophysical, and geologic data used to substantiate the proposed setting depths of the conductor and surface casings (such as estimated fracture gradients, pore pressures, shallow hazards, etc.) shall be furnished with the Application for Permit to Drill.

2.3 *Intermediate Casing.* One or more strings of intermediate casing shall be set when required by anticipated abnormal pressure, mud weight, sediment, and other well conditions. the proposed setting depth for intermediate casing shall be based on the pressure tests of the exposed formation below the surface casing shoe or on subsequent pressure tests. After drilling a maximum of 30 meters (98 feet) below the intermediate casing shoe, a pressure test shall be obtained to aid in determining a formation leak-off or to test a predetermined equivalent mud weight.

A quantity of cement sufficient to cover and isolate all hydrocarbon zones and to isolate abnormal pressure intervals from normal pressure intervals shall be used. Sufficient cement shall be used to provide annular fill-up to a minimum of 150 meters (492 feet) above the zones to be isolated or 150 meters (492 feet) above the casing shoe in cases where zonal coverage is not required. If a liner is used as an intermediate string, it shall be lapped a minimum of 30 meters (98 feet) into previous casing string, and the cement shall be tested by a fluid entry or pressure test to determine whether a seal between the liner top and the next larger string has been achieved. The test shall be recorded on the driller's log. When such liner is used as production casing, it shall be extended to the surface and cemented to avoid surface casing being used as production casing.

2.4 *Production Casing.* This string of casing shall be set before completing the well for production. It shall be cemented in a manner necessary to cover or isolate all zones which contain hydrocarbons. But in any case, a calculated volume sufficient to fill the annular space at least 150 meters (492 feet) above the uppermost producible hydrocarbon zone must be used. When a liner is used as production casing, it shall be lapped a minimum of 30 meters (98 feet) into the previous casing string, and the testing of the seal between the liner top and the next larger string shall be conducted as in the case of intermediate liners. The test shall be recorded on the driller's log.

2.5 *Pressure-Testing of Casing.* Prior to drilling the plug after cementing, all casing strings, except the drive or structural casing, shall be pressure-tested as shown in the table shown. The test pressure shall not exceed the internal yield pressure of the casing. The surface casing shall be tested with water in the top 30 meters (98 feet) of the casing. If the pressure declines more than 10 percent in 30 minutes, or if there is other indication of a leak, the casing shall be recemented, repaired, or an additional casing string run, and the casing tested again. The above procedures shall be repeated until a satisfactory test is obtained.

Casing	Minimum surface pressure
Conductor	1,400 kilopascals (kPa) (203 lb/in²).
Surface	6,900 kPA (1,000 lb/in²).
Intermediate, liner, and production.	10,400 kPa (1,508 lb/in²) or 5 kPa/m (0.22 lb/in²/ft), whichever is greater.

After cementing any of the above strings, drillings shall not be commenced until a time lapse of 8 hours under pressure for the conductor casing string or 12 hours under pressure for all other strings. Cement is considered under pressure if one or more float valves are employed and are shown to be holding the cement in place or when other means of holding pressure is used. All casing pressure tests shall be recorded on the driller's log.

In all cases, sufficient time must elapse to allow the bottom 153 meters (500 feet) of annular cement fill, or total length of annular cement fill, if less, to attain a compressive strength of at least 3,448 kPa (500 psi) before drilling commences. The typical performance data for the particular cement mix used in the well shall be used to determine the time lapse required.

3. *Directional Surveys.* Wells are considered vertical if inclination does not exceed three degrees from the vertical. Inclination surveys shall be obtained on all vertical wells at intervals not exceeding 150 meters (492 feet) during the normal course of drilling.

Wells are considered directional if inclination exceeds three degrees from the vertical. Directional surveys giving both inclination and azimuth shall be obtained on all directional wells at intervals not exceeding 150 meters (492 feet) during the normal course of drilling and at intervals not exceeding 30 meters (98 feet) in all angle change portions of the hole. On both vertical and directional wells, directional surveys giving both inclination and azimuth shall be obtained at intervals not exceeding 150 meters (492 feet) prior to, or upon, setting surface or intermediates casing, liners, and at total depth.

Composite directional surveys shall be filed with the District Supervisor. The interval shown will be from the bottom of conductor casing, or, in the absence of conductor casing, from the bottom of drive or structural casing to total depth. In calculating all surveys, a correction from true north to Universal Transverse Mercator Grid north or Lambert Grid north shall be made after making the magnetic to true north correction.

4. *Blowout-Preventer (BOP) Equipment Requirements.*

4.1 *General Requirements.* Blowout preventers and related well-control equipment shall be installed, used, and tested in a manner necessary to insure well control.

4.1.1 *BOP Equipment.* Blowout-preventer equipment shall consist of an annular and the specified number of ram-type preventers. The pipe rams shall be of proper size to fit the drill pipe in use. The working pressure of any blowout preventer shall exceed the maximum anticipated surface pressure to which it may be subjected. Information submitted with the Application for Permit to Drill shall include the maximum anticipated surface pressure and the criteria used to determine this pressure. All blowout-preventer systems shall be equipped with:

a. A hydraulic-actuating system that provides sufficient accumulator capacity to close all BOP equipment units with a 50 percent operating fluid reserve at 8,300 kPa (1,204 psi). An accumulator backup system, driven by a source of power independent from the primary system, shall be provided with sufficient capacity to close all blowout preventers and hold them closed. Locking devices shall be provided on the ram-type preventers. The method of BOP actuation, such as hydraulic, acoustic or other methods, shall be described and included in the Application for Permit to Drill.

b. At least one operable remote blowout-preventer-control station in addition to the one on the drilling floor.

c. A drilling spool with side outlets, if side outlets are not provided in the BOP body, to provide for a kill line and choke line.

d. A kill line with a master valve located adjacent to the BOP. This valve shall not be used for normal opening or closing on flowing fluids. The kill line shall have at least one control valve in addition to the master valve.

e. A choke manifold equipped in accordance with American Petroleum Institute Recommended Practice entitled "Blowout-Prevention Equipment Systems," API RP 53, First Edition, February 1976, Sections 3A and 3B, or subsequent revisions thereto approved by the Supervisor.

f. A fill-up line.

g. Valves, pipes, and fittings upstream of an including the choke manifold that can be exposed to pressure from the wellbore, with a pressure rating at least equal to that of the blowout-preventer equipment.

4.1.2. *Auxiliary Equipment.* The following auxiliary equipment shall also be provided:

a. A top kelly cock shall be installed below the swivel, and an essentially full-opening kelly cock of such design that it can be run through blowout preventers shall be installed at the bottom of the kelly.

b. An inside blowout preventer and an essentially full-opening drill string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted. Such valves shall be maintained on the rig floor to fit all connections that are in the drill string.

c. A safety valve shall be available on the rig floor assembled with the proper connection to fit the casing string that is being run in the hole at the time.

4.1.3 *Subfreezing Operations.* The blowout preventers and related control equipment must be equipped and conditioned to assure proper operation under subfreezing conditions when operations will be conducted over winter months in areas likely to experience these conditions.

4.2 *Subsea BOP Requirements.* The minimum requirements for drilling below the casing strings for subsea blowout-preventer stacks are tabulated below:

Subsea BOP Stacks	
Drive pipe	1—Annular or pressure rotating pack-off head.[1]
Conductor	1—Annular and diverter.[2]
Surface	1—Annular. 2—Pipe rams. 1—Blind shear ram.
Intermediate	1—Annular. 2—Pipe rams.[3] 1—Blind shear ram.

[1] To be installed on top of the marine riser.

[2] The diverter system shall provide as a minimum two 15-centimeter (6-inch) internal diameter lines and full-opening valves.

[3] When a tapered drill string is in use, the BOP stack shall be additionally equipped with a minimum of one set of pipe rams to fit the smaller size(s) drill pipe.

NOTE.—The working pressure of all blowout preventers shall exceed the maximum anticipated surface pressure to which they may be subjected.

Subsea blowout-preventer stacks shall be equipped with blind-shear rams. A subsea accumulator system is required to provide fast closure of the preventers and for cycling all critical functions in case of loss of connection to the surface. A fail-safe design shall be incorporated into the blowout-preventer system and shall include dual pod control systems and fail-safe valving on critical lines and outlets. Prior to the removal of the marine riser for installing casing, the riser shall be displaced with sea water. The operator shall insure that sufficient hydrostatic head exists within the well bore to compensate for the reduction in head and maintain a safe well condition. If repair or replacement of the blowout-preventer stack is necessary after installation, this work will be accomplished after casing has been cemented prior to drilling out the shoe or by setting a cement or bridge plug to insure safe well conditions.

4.3 *Surface BOP Requirements.* The minimum requirements for drilling below the casing strings for conventional surface blowout-preventer stacks are tabulated below:

Minimum BOP requirements

Surface BOP stacks	
Drive pipe	1—Annular or pressure rotating pack-off head. Diverter.[1]
Conductor casing	1—Annular and diverter.[1]
Surface casing	1—Annular. 2—Pipe rams. 1—Blind ram.
Intermediate casing.	1—Annular. 2—Pipe rams.[2] 1—Blind ram.

[1] The diverter system shall provide, as a minimum, two 15-centimeter (6-inch) internal diameter lines and full-opening valves.

[2] When a tapered drill string is in use, the BOP stack shall be additionally equipped with a minimum of one set of pipe rams to fit the smaller size(s) drill pipe.

NOTE.—The working pressure of all blowout preventers shall exceed the maximum anticipated surface pressure to which they may be subjected.

4.4 *Drive Pipe or Structural Casing BOP Requirements.*

4.4.1 *Surface BOP.* Before drilling below this string, at least one remotely controlled, annular-type blowout preventer or pressure-rotationg, pack-off-type head and related equipment shall be installed for circulating the drilling fluid to the drilling structure or vessel.

4.4.2 *Subsea BOP.* When the blowout-preventer system is on the ocean floor, the choke and kill lines or equivalent vent lines, equipped with necessary connections and fittings, can be used for diversion, if approved by the Supervisor, or an annular preventer or pressure-rotating, packoff-type head, equipped with suitable diversion lines, shall be installed on top of the marine riser. The diverter system shall be equipped with automatic, remotely-controlled valves which open, prior to shutting in the well. Lines venting in different directions to permit downwind diversion shall be provided. A schematic diagram and operational procedure for the diverter system shall be submitted with the Application for Permit to Drill (Form 9-331C) to the District Supervisor for approval.

4.4.3 *Floating Drilling Operations.* In drilling operations where a floating or semi-submersible type of drilling vessel is used and formation competency at the structural casing setting depth is not adequate to permit circulation of drilling fluids to the vessel while drilling conductor hole, a program which provides for safety in these operations shall be described and submitted to the District Supervisor for approval. This program shall include all known pertinent and relevant information, including seismic and geologic data, water depth, drilling-fluid hydrostatic pressure, schematic diagram from rotary table to proposed conductor-casing seat, and contingency plan for moving off location. In all areas where shallow hazards or hydrocarbons are unknown, seismic data shall be obtained, and a small-diameter initial pilot hole from the bottom of drive or structural casing to proposed conductor-casing seat shall be drilled to aid in determining the presence or absence of these hazards. All seismic data relating to shallow hazards shall be made available to the Supervisor, and an analysis of the geologic hazards shall be furnished with the Application for Permit to Drill.

4.5 *Conductor Casing.* Before drilling below this string, at least one remotely-controlled, annular-type blowout preventer, a diverter system as described in subparagraph 4.4 above, and equipment for circulating the drilling fluid to the drilling structure or vessel shall be installed.

4.6 *Surface and/or Intermediate Casing.* Before drilling below this string, the blowout-preventer equipment shall include a minimum of:

a. Four remotely-controlled, hydraulically-operated blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including at least two equipped with pipe rams, one with blind rams, and one annular type. (Subsea blowout-preventer stacks used with floating drilling vessels shall be equipped with one set of blind-shear rams.)

b. In addition to the above, when a tapered string is used for drilling intermediate casing hole, the BOP stack shall be additionally equipped with a minimum of one set of pipe rams to fit the smaller size(s) drill pipe.

c. A drilling spool with side outlets, if side outlets are not provided in the blowout-preventer body.

d. A choke line and manifold.

e. A kill line separate from the choke line.

f. A fill-up line.

4.7 *Testing.*

4.7.1 *BOP Controls.* A minimum of one operable remote blowout-preventer control station shall be provided, in addition to the primary blowout-preventer control station on the drilling floor. Accumulators or accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic blowout preventers.

4.7.2 *Pressure Tests.* Ram-type blowout preventers and related control equipment shall be tested at the rated working pressure of the BOP stack assembly, or at 70 percent of the minimum internal yield pressure of the casing, whichever is the lesser. Annular-type preventers shall be tested at 70 percent of the applicable above pressure test requirements. All preventers shall first be tested at low pressures of 1,400 to 2,000 kPa (203 to 290 psi).

All preventers shall be tested:

a. When installed.

b. Before drilling out after each string of casing has been set.

c. Not less than once each week alternating between control stations.

d. Following repairs that require disconnecting a pressure seal in the assembly.

4.7.3 *Actuation.* While drill pipe is in use, the following actuation procedures shall be performed, as a minimum, to determine the proper functioning of the blowout preventers and control stations:

a. Pipe Rams—Actuated daily.

b. Blind/Shear Rams—Actuated while drill pipe is out of the hole, once each trip, but not more than once each day.

c. Tapered Drill String Pipe Rams—The smaller size pipe rams shall be actuated on the appropriate drill pipe size once each trip.

d. Annular-Type Preventer—Actuated on the drill pipe, in conjunction with the pressure test, once each week.

e. Control Stations—Actuated while drill pipe is out of the hole, once each trip, but not more than once each day.

4.8 *Inspection and Maintenance.* All blowout-preventer systems and marine risers and associated equipment shall be inspected and maintained in accordance with the manufacturer's recommended procedures. The blowout preventers and marine risers shall be visually inspected during each trip and in no event less than once each day. Inspection of subsea installations may be accomplished by the use of television equipment.

4.9 *Drills.* All drilling personnel shall be indoctrinated in blowout-preventer procedures and be familiar with the blowout-preventer equipment before starting work on the well. A blowout-preventer drill shall be conducted at least weekly for each drilling crew to insure that all equipment is operational and that crews are trained properly to carry out emergency duties. These drills shall be performed during various drilling operations such as drilling, running and pulling the drill string, and when out of the hold. All blowout-preventer tests and crew drills shall be recorded on the driller's log. The operator shall furnish current schedules of drills to the District Supervisor so that a U.S. Geological Survey representative may witness any drill. Such a drill may be required by a U.S. Geological Survey representative at any time during the drilling operation. The drill shall include as a minimum:

a. Sounding of a warning signal sometimes actuated by pit-level indicator or other automatic device.

b. Withdrawing the kelly.

c. Stopping the pump.

d. Observing flow of mud from the well.

e. Actuation of the blowout preventers.

(In order to prevent damage to the rams, complete closure of the rams on drill pipe is not required on float drilling vessels.)

5. *Mud Program.* The characteristics, use, and testing of drilling mud and the conduct of related drilling procedures shall be such as are necessary to prevent the blowout of any well. Qunatities of mud materials sufficient to insure well control shall be maintained readily accessible for use at all times.

5.1 *Mud Control.* Before starting out of the hole with drill pipe, the mud shall be properly conditioned. Proper conditioning requires either circulation with the drill pipe just off bottom to the extent that the annular volume is displaced or proper documentation in the driller's log prior to pulling the drill pipe that:

a. There was no indication of influx of formation fluids prior to starting to pull the drill pipe from the hole.

b. The weight of the returning mud is not less than the weight of the mud entering the hole.

c. Other mud properties recorded on the daily drilling log are within the specified ranges at the stage of drilling the hole to perform their required functions.

In those cases when the hole is circulated, the driller's log shall be so noted.

When coming out of the hole with the drill pipe, the annulus shall be filled with mud before the mud level drops 30 meters (98 feet). A mechanical device for measuring the amount of mud required to fill the hole shall be utilized, and any time there is an indication of swabbing or influx of formation fluids the necessary safety devices and action shall be employed to control the well. The mud shall not be circulated and conditioned, except on or near bottom, unless well conditions prevent running the drill pipe back to the bottom. The mud in the hole shall be circulated or reverse-circulated prior to pulling drill-stem test tools from the hole.

The hole shall be filled by accurately measured volumes of mud. The number of stands of drill pipe and drill collars that may be pulled between the times of filling the hole shall be calculated and posted. The number of barrels and pump stroke required to fill the hole for this designated number of stands of drill pipe and drill collars shall be posted. For each casing string, the maximum pressure which may be applied to the blowout preventer before controlling excess pressure by bleeding through the choke shall be posted near the driller. Drill pipe pressure shall be monitored during the bleeding procedure for well control.

A mud gas separator and degasser shall be installed in the mud system prior to the commencement of drilling operations and shall be maintained for use throughout the drilling and completion of the well.

5.2. *Mud Test Equipment.* Mud test equipment shall be maintained on the drilling rig at all times, and mud tests shall be performed once each tour or more frequently as conditions warrant. Such tests shall be conducted in accordance with procedures outlined in API RP 13B, "Recommended Practice for Standard Procedure for Testing Drilling Fluids," Sixth Edition, April 1976, or subsequent revisions as approved by the Supervisor, and the results recorded and maintained at the drill site. The following mud-system monitoring equipment shall be installed (with derrick floor indicators) and used at the point in the drilling operation when mud returns are established and throughout subsequent drilling operations:

a. Recording mud pit level indicator to determine mud pit volume gains and losses. This indicator shall include a visual and audio warning device.

b. Mud volume measuring device for accurately determining mud volumes required to fill the hole on trips.

c. Mud return indicator to determine that returns essentially equal the pump discharge rate.

d. Gas-detecting equipment to monitor the drilling mud returns.

5.3 *Mud quantities.* The operator shall include, with his Application for Permit to Drill a tabulation of well depth versus minimum quantities of mud material including weighting material to be maintained at the drill site for emergency use. The minimum quantities of mud material required shall be based on the criteria listed in a and b below taking into account the availability of the mud capacity storage of the drilling vessel. When the mud quantity required exceeds the storage capacity of the vessel, the operator must demonstrate that the mud inventories on hand are sufficent to maintain well control until additional quantities can be delivered to the well site.

a. The quantity of the mud material shall be based on twice the volume of the calculated capacity of the active downhole and surface mud system.

b. The quantity of the weighting material shall be based on the amount required to overcome the highest anticipated formation pressure.

Daily inventories of mud materials, including barite, shall be recorded to provide a basis for comparison with the tabulation of well depth versus minimuim quantities of mud material. Drilling operations shall be suspended in the absence of minimum quantities of mud material specified in the table.

6. *Supervision, surveillance, and training.*

6.1 *Supervision.* A representative of the operator shall provide onsite supervision of drilling operations on a 24-basis.

6.2 *Surveillance.* From the time drilling operations are initiated and until the well is completed or abandoned, a member of the drilling crew or the toolpusher shall maintain rig floor surveillance continuously unless the well is secured with blowout preventors or cement plugs.

6.3 *Training.* Company and drilling contractor supervisory personnel including drillers shall be trained in and qualified for present-day well control. Records of such training and qualification shall be maintained at the drill site. Training shall include but is not limited to:

a. Abnormal pressure detection methods.

b. Well-control methods and procedures.

Such training shall be given in addition to the required weekly blowout-prevention drills. Written verification of compliance with these provisions shall be filed with the Supervisor. Such training shall be in accordance with the U.S. Geological Survey Outer Continental Shelf Standard No. T1 (GSS-OCS-T1), first edition, December 1977, entitled "Training and Qualification of Personnel in Well Control Equipment and Techniques for Drilling on Offshore Locations," and subsequent revisions thereto. Compliance shall be considered a prerequisite to approval of any drilling operation.

7. *Hydrogen sulfide.* When drilling operations are undertaken to penetrate reservoirs known or expected to contain hydrogen sulfide (H_2S), or, if unknown, upon encountering H_2S, the preventive measures and operating practices set forth in the U.S. Geological Survey Outer Continental Shelf Standard No. 1, "Safety Requirements for Drilling Operations in a Hydrogen Sulfide Environment (GSS-OCS-1)," February 1976, or subsequent revisions thereto, shall be followed.

8. *Critical operations and curtailment plans.* Certain operations performed in drilling are more critical than others with respect to well control, fire, explosion, oil spills, and other discharges or emissions. These operations may occur during drilling, running casing, logging, drill-stem testing, well completion, or wireline operations.

Each operator shall file with the Supervisor for approval of a critical operations and curtailment plan, for the lease, which shall contain:

a. A list or description of the critical drilling operations that are likely to be conducted on the lease. Such list or description shall specify the operations to be ceased, limited, or not to be commenced under given circumstances or conditions. The list shall include operations such as:

(1) Drilling in close proximity to another producing well.

(2) Drill-stem testing.

(3) Running and cementing casing.

(4) Cutting and recovering casing.

(5) Logging or wireline operations.

(6) Well-completion operations.

(7) Moving the drilling vessel off location in an emergency, repositioning the vessel on location, and reestablishing entry into the well.

b. A list or description of circumstances or conditions under which such critical operations shall be curtailed. This list or description shall be developed from all the factors and conditions relating to the conduct of operations on the lease and shall consider, but not necessarily be limited to, the following:

(1) Whether the drilling operations are to be conducted from mobile drilling units or fixed platforms.

(2) The availability and capability of containment and cleanup equipment.

(3) Abnormal or unusual characteristics expected to be encountered during drilling operations.

(4) Spill-control system response time.

(5) Known or anticipated meterological or oceanographical conditions.

(6) Availability of personnel and equipment for the particular operation to be conducted.

(7) Other factors peculiar to the particular lease under consideration.

c. When any such circumstance or condition listed or described in the plan occurs or other operational limits are encountered, the operator shall notify the Supervisor and shall curtail the critical operations as set forth under 8(a) above.

d. Any deviations in the plan shall require prior approval by the Supervisor except in case of an emergency in which event the Supervisor shall be notified as soon as possible.

e. The operator shall review the plan at least annually. Notification of the review and any amendments or modifications to the plan shall be filed with the Supervisor.

NORTH ATLANTIC OCS ORDER NO. 5

PARAGRAPH 1. *Installation.* Several commenters suggested that surface-

controlled subsurface-safety devices be required only on wells with shut-in tubing pressures of less than 4,000 psig. Their rationales were based, in part, on the limited availability of high-pressure, surface-controlled subsurface valves, or equipment limitations. It is believed that the added safety factor of surface-controlled subsurface-safety devices warrant the requirement for their use. The comments pertaining to pressure criteria and the limited availability of surface-controlled subsurface-safety devices do not justify the use of subsurface-controlled valves. The reliability and ease of maintenance of surface-controlled subsurface-safety devices is the overriding consideration.

A commenter suggested that downhole check valves be allowed in injection wells and that water injection wells be controlled by surface-safety devices. It is felt that antipollution and safety requirements would not be honored if surface-controlled subsurface-safety valves were not installed in injection wells. Injection wells, regardless of their history of activity, often contain residual volumes of oil and/or entrained gas. These residual volumes collect in the well bore when injection is terminated, and the injection well is then capable of flowing oil or gas. High salinity water is also a pollutant.

PAR. 2. *Design testing and inspection.* The testing frequency for surface-controlled subsurface-safety valves (SCSSV's) was questioned by one commenter who believed that testing should be maintained on a monthly basis. The testing frequency outlined in the Order serves two purposes. By frequently testing the SCSSV when first installed, it is determined if the valve is properly installed and functioning as predicted. By decreasing the testing frequency, after 6 months, to quarterly rather than monthly testing, excessive wear on the SCSSV is avoided.

PAR. 4. *Additional protective equipment.* Several commenters pointed out that this paragraph used the term "measured top of cement" although there had been no requirement to make such a measurement. The words "or calculated" were added to the sentence.

DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, CONSERVATION DIVISION

EASTERN REGION, ATLANTIC AREA AND NORTH ATLANTIC

OCS Order No. 5, Effective January 1, 1978

Subsurface-Safety Devices

This order is established pursuant to the authority prescribed in 30 CFR 250.11, 30 CFR 250.12(a), 30 CFR 250.45, 30 CFR 250.46, and in accordance with 30 CFR 250.41(b). The operator shall be responsible for compliance with the requirements of this Order in the installation and operation of all platforms and structures and all facilities installed thereon including those facilities not operated or owned by the operator. All applications for approval under the provisions of this Order shall be submitted to the appropriate District Supervisor. All departures from the requirements specified in this order shall be subject to approval to 30 CFR 250.12(b).

1. *Technological improvement.* As techological research, progress, and product improvement result in increased effectiveness of existing safety devices or the development of new devices or systems, such devices or systems may be required or used upon application, justification, and approval. Applications for routine use shall include evidence that the device or system has been field-tested at least once each month, for a minimum of 6 consecutive months, and that each test indicated proper operation.

2. *Subsurface-safety devices.*

2.1 *Installation.* All tubing installations open to and capable of producing from hydrocarbon-bearing zones shall be equipped with a subsurface-safety device unless, after application and justification, the well is determined to be incapable of flowing. The device is to be installed at a depth of 30 meters (98 feet) or more below the ocean floor. These installations shall be made within 2 days after stabilized production is established. The well shall not be left unattended while open to production until a subsurface-safety device is installed.

2.2 *Design, testing, and inspection.* Subsurface-safety devices shall be designed, adjusted, installed, and maintained to insure reliable operation. During testing and inspection procedures, the well shall not be left unattended while open to production unless a properly operating subsurface-safety device has been installed in the well.

2.3 *Surface-controlled subsurface-safety devices.* All tubing installations open to and capable of producing from hydrocarbon-bearing zones shall be equipped with a surface-controlled subsurface-safety device, except as specified in subparagraph 2.4 below. The surface controls may be located onsite or remotely.

2.3.1 *Quality assurance and performance.* Subsurface-safety devices installed after July 1, 1979, shall conform to the following standards, or subsequent revisions thereto, as approved by the Supervisor:

a. American petroleum Institute, "Specification for Subsurface Safety Valves," API Spec 14A, second edition, November 1977, as amended by Supplement 1, January 1978.

b. American National Standards Institute/American Society of Mechanical Engineers Standard, "Quality Assurance and Certification of Safety and Pollution Prevention Equipment Used in Offshore Oil and Gas Operations," ANSI/ASME OCS-1-1977.

c. American National Standards Institute/American Society of Mechanical Engineers Standard, "Accreditation of Testing Laboratories for Safety and Pollution Prevention Equipment Used in Offshore Oil and Gas Operations," ANSI/ASME OCS-2-1977.

2.3.2 *Installation and testing.* The operator shall comply with the minimum recommended practices set forth in API recommended practice, RP14B, first edition, October 1973, "Design, Installation, and Operation of Subsurface-Safety Valve Systems," or revisions thereto as approved by the Supervisor which contain procedures for design calculations, safe installation, and operating and testing. Each surface-controlled or other remotely-controlled subsurface-safety device installed in a well shall be tested in place for proper operation when installed, or reinstalled, at least monthly for the next 6 months and quarterly thereafter. If the device does not operate properly, it shall be promptly removed, repaired, and reinstalled or replaced and tested to insure proper operation.

2.4 *Shut-in wells.* A tubing plug shall be installed in lieu of, or in addition, to, other subsurface-safety devices if a well has been shut in for a period of 6 months. Such plugs shall be set at a depth of 30 meters (98 feet) or more below the ocean floor. All retrievable plugs installed after the date of this Order shall be of the pump-through type. All wells perforated and completed, but not placed on production, shall be equipped with a subsurface-safety device or tubing plug within 2 days after completion. A surface-controlled subsurface-safety device of the pump-through type may be used as a pump-through tubing plug for the purpose of this subparagraph, provided the surface control has been rendered inoperative.

2.5 *Injection Wells.* Surface-controlled subsurface-safety devices shall be installed in all injection wells unless, after application and justification, it is determined that the well is incapable of flowing.

2.6 *Tubing Plugs.* A shut-in well equipped with a tubing plug shall be inspected for leakage by opening the well to possible flow at intervals not exceeding 6 months. No sustained liquid flow or gas leakage is allowed. In the event leakage is detected, the plug shall be removed, repaired, and reinstalled, or an additional tubing plug may be installed in lieu of removal and repair.

2.7 *Temporary Removal for Routine Operations.* Each wireline- or pumpdown-retrievable subsurface-safety device may be removed, without further authorization or notice, for a routine operation which does not require the approval of a Sundry Notice and Report on Wells (Form 9-331) for a period not to exceed 15 days. The well shall be clearly identified as being without a subsurface-safety device and shall not be left unattended while open to production unless approved by the District Supervisor. The provisions of this subparagraph are not applicable to the testing and inspection procedures specified in subparagraph 2.2 above.

2.8 *Additional Protective Equipment.* All tubing installations in which a wireline- or pumpdown-retrievable subsurface-safety device is to be installed shall be equipped with a landing nipple, flow couplings, or other protective equipment, above and below, to provide for setting of the subsurface-safety device. All wells in which a subsurface-safety device or tubing plug is installed shall have the tubing-casing annulus packed off above the uppermost open casing perforations and at least 30 meters (98 feet) below the measured or calculated top of cement of the production string or the intermediate string. The control system for all surface-controlled subsurface-safety devices shall be an integral part of the platform shut-in system.

2.9 *Departures.* All applications for departures shall include a detailed statement of the well conditions, efforts made to overcome any difficulties, and proposed alternate safety measures.

2.10 *Emergency Action.* All tubing installations open to and capable of producing from hydrocarbon-bearing zones and not equipped with a subsurface-safety device as permitted by subparagraph 2.7 of this Order shall be clearly identified as not being so equipped, and a subsurface-safety device or

tubing plug shall be available at the field location. In the event of an emergency, such as an impending storm, such device or plug shall be promptly installed with due consideration being given to personnel safety.

2.11 *Records.* The operator shall maintain the following records for a minimum period of 1 year for each subsurface-safety device and tubing plug installed, and these records shall be available to any authorized representative of the Geological Survey.

2.11.1 *Field Records.* Individual well records shall be maintained at or near the field and shall include, as a minimum, the following information:

a. A record which will give design and other information; i.e. make, model type, spacers, beam and spring size, pressure, etc.

b. Verification of assembly by a qualified person in charge of installing the device, and the installation date.

c. Verification of setting depth and all operational tests as required in this Order.

d. Removal date, reason for removal, and reinstallation date.

e. A record of all modifications of design in the field.

f. All mechanical failures or malfunctions, including sand cutting of such devices, with notation as to cause or probable cause.

g. Verification that failure report was submitted.

2.11.2 *Other Records.* The following records, as a minimum, shall be maintained at the operator's office:

a. Verified design information of subsurface-safety devices for the individual well.

b. Verification of assembly and installation according to design information.

c. All failure reports.

d. All laboratory analysis reports of failed or damaged parts.

e. Quarterly failure-analysis report.

2.12 *Reports.* Well completion reports (Form 9-330) and any subsequent reports of workover (Form 9-331) shall include the type and the depth of the subsurface-safety devices and tubing plugs installed.

To establish a failure-reporting and corrective-action program as a basis for reliability and quality control, each operator shall submit a quarterly failure-analysis report to the Supervisor identifying mechanical failures by lease and well, make and model, cause or probable cause of failure, and action taken to correct the failure. The report shall be submitted within 30 days following the periods ending December 31, March 31, June 30, and September 30 of each year.

NORTH ATLANTIC OCS ORDER NO. 7

Paragraph 1. *Pollution Prevention.* One commenter suggested that the regulatory authority for pollution prevention and waste disposal be included in the Order. A Memorandum of Understanding is currently being proposed by the Environmental Protection Agency (EPA) and the Department of the Interior. The Order will be revised in the future to allow for this.

Several commenters wanted commercial fishing mentioned as one of the other users of the OSC which should not be affected by waste disposal. This addition was made to the Order.

A statement that no liquids may be disposed of in the ocean unless disposal is consistent with EPA guidelines was requested by one commenter. Present requirements state that all discharges from fixed structures must conform to EPA guidelines. Mobile drilling units must obey USGS regulations which prohibit disposal of waste materials into the oceans creating conditions which will adversely affect the public health, life or property, aquatic life or wildlife, etc.

Shunting of drilling muds to a point near the ocean floor during disposal was requested. Shunting will be covered by a lease stipulation to North Atlantic Lease Sale No. 42.

Several commenters wanted the Order to specifically prohibit the dumping of equipment and to require that all material that could become a potential hazard to commercial fishing be indelibly marked with the name of the lessee. Subparagraph 1.2.3, "Equipment," was aded to the Order. Marking will be addressed in a lease stipulation to North Atlantic lease Sale No. 42.

One commenter noted the apparent disappearance of the third subparagraph from paragraph 1.B.(3). This section spoke of sewage and was more properly placed under liquid disposal.

Another commenter suggested that the disposal of gas into the ocean by means of "bubbling off" should be prohibited so that toxic substances would not be released. Natural gas may only be discharged under special circumstances as approved by the Supervisor. Such gas is normally flared, although it may be discharged through subsurface lines for safety reasons.

One commenter questioned the reference to incineration of solid-waste material made in the Order. All references to incineration were deleted from the final North Atlantic OCS Orders. However, at locations where air standards are not adversely affected, this is one method by which operators may dispose of solid-waste materials.

At least biweekly pollution-control inspections by USGS personnel for each offshore facility were recommended by one commenter. This comment addresses internal USGS policy and is a subject which should not be included in the Orders.

Paragraph 2. *Personnel, Inspection and Reports.* A recommendation was made that a training program be established for oil-industry personnel on the avoidance of conflicts with the commercial fishing industry. Although the USGS will attempt to minimize conflicts between the two industries, the North Atlantic OCS Orders are not considered a proper vehicle for this effort.

A commenter suggested that the Order should specifically state the purpose of the facility pollution inspection such as the detection of minor leaks, oil spills, etc. The paragraph was broadly reworded to state that facilities will be inspected to determine if pollution is occurring. This is considered preferable to attempting to list each potential source of pollution.

Many commenters expressed concern over the schedule and size of oil spills that were to be reported. One also commented on the discontinuation of Form 9-1880 entitled "Pollution Report" and asked what new form would be used. The Order was revised to reflect the concern expressed by commenters on prompt and detailed notification of oil spills. The "Pollution Report" form was abolished due to the government-form reduction program. Spills must still be reported, both orally and in writing, and the reports will be available for public inspection.

Paragraph 3. *Pollution-Control Equipment and Oil-Spill Contingency Plan.* A commenter suggested that this paragraph set performance standards for oil-cleanup equipment and require offshore storage of sufficient equipment to clean up minor spills. By reviewing the operator's oil-spill contingency plan, the Supervisor evaluates the adequacy of the pollution equipment. Offshore storage of equipment would be more properly and more precisely addressed in an OCS Notice to Lessees and Operators.

The use of sinking agents for oil-spill control was objected to by one commenter. The Order was amended to refer to the National Oil and Hazardous Substances Pollution Contingency Plan. No chemical dispersants will be permitted for pollution-control purposes without EPA approval. Chemical dispersants may be necessary to prevent fire hazards.

One commenter suggested that adjacent states and interested federal agencies be allowed to comment on the Oil Spill Contingency Plan before the Supervisor gives his approval of the plans. Also, disposal of oil waste should be covered in the plan. North Atlantic OCS Order No. 12 lists the Oil Spill Contingency Plan as an item available for public inspection. A provision was added to North Atlantic OCS Order No. 7 to ensure that disposal of spill material is covered in the contingency plan.

DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, CONSERVATION DIVISION

EASTERN REGION, ATLANTIC AREA, AND NORTH ATLANTIC

OCS Order No. 7, Effective January 1, 1978

Pollution Control and Waste Disposal

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.43. The operator shall comply with the following re-

quirements. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. *Pollution Prevention.* In the conduct of all oil and gas operations, the operator shall prevent pollution of the ocean. Furthermore, the disposal of waste materials into the ocean shall not create conditions which will adversely affect the public health, life or property, aquatic life or wildlife, recreation, navigation, commercial fishing or other uses of the ocean.

1.1 *Liquid Disposal.*

1.1.1 *Oil-Cut Drilling Mud.* Drilling mud containing free oil shall not be disposed of into the ocean.

1.1.2 *Drilling-Mud Components.* The operator shall submit as a part of the Application for Permit to Drill (Form 9-331C) a detailed list of drilling-mud components including the common chemical or chemical trade name of each component, a list of the drilling mud additives anticipated for use in meeting special drilling requirements, and the proposed method of drilling-mud disposal. Disposal of drilling mud shall be by methods which will minimize the adverse effects to marine life. Approval of drilling-mud disposal into the ocean must be obtained from the District Supervisor; each request will be site specific and decided on a case-by-case basis.

1.1.3 *Hydrocarbon-Handling Equipment.* All production facilities such as separators, tanks, treaters, and other hydrocarbon-handling equipment shall be designed and operated in a manner necessary to prevent pollution. Maintenance or repairs as are necessary to prevent pollution of the ocean shall be undertaken immediately.

1.1.4 *Curbs, Gutters, and Drains.* Curbs, gutters, and drains shall be installed in all deck areas in a manner necessary to collect all contaminants in a closed sump or in a sump pile, unless drip pans or equivalent are placed under equipment and piped to a closed sump or sump pile which will automatically maintain the oil at a level sufficient to prevent discharge into the ocean. All walking and working surfaces shall be kept free of all liquid accumulations. Sump piles shall not be used as a processing device to treat or skim liquids but shall be used to collect treated produced water, treated sand, liquids from drip pans and deck drains, and as a final trap for hydrocarbon liquids in the event of equipment upsets.

1.1.5 *Fixed-Structure Discharges.* Discharges from fixed structures including sanitary waste, produced water, and deck drainage are subject to the Environmental Protection Agency's permitting procedures pursuant to the Federal Water Pollution Control Act as amended.

1.1.6 *Mobile Drilling-Unit Discharges.* Discharges from mobile drilling units including produced water and deck drainage shall contain no free oil and shall not cause a sheen to form on the surface of the ocean. Marine sanitation devices for mobile drilling units shall meet Coast Guard Type I specifications.

1.2 *Solid Material Disposal.*

1.2.1 *Well Solids.* Drill cuttings, sand, and other well solids containing oil shall not be disposed of into the ocean unless all of the free oil has been removed.

1.2.2 *Containers.* Containers and other similar solid-waste materials shall not be disposed of into the ocean.

1.2.3 *Equipment.* Disposal of equipment into the ocean is prohibited except under emergency conditions. The location and description of any equipment so discharged shall be reported to the District Supervisor.

2. *Personnel, Inspections, and Reports.*

2.1 *Personnel.* The operator's personnel shall be thoroughly instructed in the techniques of equipment maintenance and operation for the prevention of pollution. Non-operator personnel providing services offshore shall be informed in writing, prior to executing contracts, of the operator's obligations to prevent pollution and of the provisions of this Order.

2.2 *Pollution Inspections.*

2.2.1 *Manned Facilities.* Manned drilling and production facilities shall be inspected daily to determine if pollution is occuring. Such maintenance or repairs as are necessary to prevent pollution of ocean waters shall be immediately undertaken and performed.

2.2.2 *Unattended Facilities.* Unattended facilities, including those equipped with remote control and monitoring systems, shall be inspected daily or at intervals prescribed by the District Supervisor and necessary maintenance or repairs immediately made thereto.

2.3 *Pollution Reports.* All spills of oil and liquid pollutants shall be reported orally to the District Supervisor and confirmed in writing. The reports shall include the cause, location, ocean state, meteorological conditions, size and appearance of slick, volume of spill, and action taken.

2.3.1 *Spills.* Spills shall be reported orally as follows:

a. Less than 1.0 cubic meters (6.3 barrels) within 12 hours.

b. 1.0 to 5.0 cubic meters (6.3 to 31.5 barrels) within 4 hours.

c. More than 5.0 cubic meters (31.5 barrels) without delay.

2.3.2 *Observed Malfunctions.* Operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.

3. *Pollution-Control Equipment and Oil-Spill Contingency Plan.*

3.1 *Equipment.* Standby pollution-control equipment and materials shall be maintained by, or shall be available to, each operator at an offshore location or at such location as required by the Supervisor. This shall include containment booms, skimming apparatus, cleanup materials, and chemical agents which shall be available prior to the commencement of operations. The use of chemicals shall be permitted only after approval by the Supervisor in accordance with Annex X, National Oil and Hazardous Substances Pollution Contingency Plan. The equipment and materials shall be inspected monthly and maintained in good condition for use. The results of the inspections shall be recorded and maintained at the site.

3.2 *Oil-Spill Contingency Plan.* The operator shall submit an oil-spill contingency plan for approval by the Supervisor prior to approval of an applicaiton for a permit to conduct operations. This plan shall contain the following:

a. Provisions to assure that full resource capability is known and can be committed during an oil-discharge situation including the identification and inventory of applicable equipment, materials, and supplies which are available locally and regionally, both committed and uncommitted, and the time required for deployment.

b. Provisions for varying degrees of response effort depending on the severity of the oil discharge.

c. Provisions for protecting areas of special biological sensitivity.

d. Establishment of procedures for the purpose of early detection and timely notification of an oil discharge including a current list of names, telephone numbers, and addresses of the responsible persons and alternates on call to receive notification of an oil discharge, as well as the names, telephone numbers, and addresses of regulatory organizations and agencies to be notified when an oil discharge is discovered.

e. Provisions for well-defined and specific actions to be taken after discovery and notification of an oil discharge including:

(1) Specification of an oil-discharge response operating team consisting of trained, prepared, and available operating personnel.

(2) Predesignation of an oil discharge response coordinator who is charged with the responsibility and delegated commensurate authority for directing and coordinating response operations.

(3) A preplanned location for an oil discharge response operations center and a reliable communications system for directing the coordinated overall response operations.

(4) Provisions for disposal of recovered spill material

4. *Drills and Training.* Drills and training classes for familiarization with pollution-control equipment and operational procedures shall be held by the operator at locations approved by the Supervisor. The drills shall be realistic and shall include deployment of the equipment. A drill schedule acceptable to the Supervisor shall be set by the operator and a copy shall be sent to the District Supervisor in sufficient time for U.S. Geological Survey personnel to witness any of the drills or training classes. All equipment need not be deployed at each drill. Records of the drills shall be kept and made available to U.S. Geological Survey personnel. Where drill performance and results are deemed inadequate by the District Supervisor, the operator shall increase the frequency of the drills until satisfactory results are achieved.

5. *Spill Control and Removal.* Immediate corrective action shall be taken in all cases where pollution has occurred. Corrective action taken under the operator's Oil-Spill Contingency Plan shall be subject to modification when directed by the Area Supervisor. The primary jurisdiction to require corrective action to abate the source of pollution and to enforce the subsequent cleanup by the lessee or operator shall remain with the Supervisor pursuant to the provisions of this Order and the Memorandum of Understanding between the Department of Transportation (U.S. Coast Guard) and the Department of the Interior (U.S. Geological Survey) dated August 16, 1971.

6. *Contingency Plan Review.* Contingency plans shall be reviewed annually. All modifications and the results of the review shall be submitted to the Supervisor for approval.

North Atlantic OCS Order No. 12

Paragraph 1. *Availability of Records.* One commenter interpreted this paragraph to read that the location of a well is proprietary information. The geographic location of a well is public information. The Order says that the subsurface location of the top production interval is considered proprietary information and is not divulged until the commencement of production. A commenter questioned the practice of

releasing some information immediately and some following the commencement of production. Through rules such as this, the U.S. Geological Survey attempts to promote a diligent search for hydrocarbons by all leaseholders. Several commenters requested that the 5-year time period for keeping proprietary certain items of information on Form 9-330, "Well Completion Report and Log," be suspended during periods when the courts or the Secretary suspends operations. This suggestion was adopted since recent events have shown a need for this provision on the Atlantic OCS.

Paragraph 3. *Availability of Inspection Records.* A commenter suggested that this paragraph list the numerous reports available to the public which are filed by the lessees. This paragraph now contains a noncomprehensive list of items available for inspection. The Department of the Interior will make records available to the public, to the greatest extent possible, in keeping with the spirit of the Freedom of Information Act.

DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY, CONSERVATION DIVISION

EASTERN REGION, ATLANTIC AREAS AND NORTH ATLANTIC

OCS Order No. 12, Effective January 1, 1978

Public Inspection of Records

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.97 and 43 CFR Part 2. Requests for information made under the Freedom of Information Act, 5 U.S.C. 552, will be governed by the provisions of 43 CFR Part 2 (40 FR 7304, February 19, 1975). All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. *Filing of Reports.* All reports on Forms 9-152, 9-330, 9-331, 9-331C, 9-1869, 9-1870 and the forms used to report the results of multi-point back-pressure tests shall be filed by the operator in accordance with the following:

a. All reports submitted on these forms shall include a copy with the words "Public Information" shown on the lower right-hand corner. This copy of the form shall be made available for public inspection.

b. All items on the form not marked "Public Information" shall be completed in full, and such forms and all attachments thereto shall not be available for public inspection.

c. The copy marked "Public Information" shall be completed in full except that the items described in subparagraphs 2.1 through 2.4 below and the attachments relating to such items may be excluded.

2. *Availability of Records.* It has been determined that certain records pertaining to leases and wells in the Outer Continental Shelf and submitted under 30 CFR Part 250 shall be made available for public inspection, as specified below, in the Area office. Certain other portions of these records have been determined to be exempt from disclosure. The reason for these exemptions is discussed in paragraph 3 of this Order.

2.1 *Form 9-152—Monthly Report of Operations.* All information contained on this form shall be available except the information required in the Remarks column.

2.2 *Form 9-330—Well-Completion or Recompletion Report and Log.*

2.2.1 *Prior to Commencement.* Prior to commencement of production, all information contained on this form shall be available except:

a. Item 1a, Type of Well.
b. Item 4, Location of Well, at top production interval and at total depth.
c. Item 22, if Multiple Completion, How many?
d. Item 24, Producing Interval.
e. Item 26, Type Electric and Other Logs Run.
f. Item 28, Casing Record.
g. Item 29, Liner Record.
h. Item 30, Tubing Record.
i. Item 31, Perforation Record.
j. Item 32, Acid, Shot, Fracture, Cement Squeeze, etc.
k. Item 33, Production.
l. Item 37, Summary of Porous Zones.
m. Item 38, Geological Markers.

2.2.2 *After Commencement of Production.* After commencement of production, all information shall be available except Item 37, Summary of Porous Zones, and Item 38, Geological Markers.

2.2.3 *5 Years Elapsed Time.* If production has not commenced after an elapsed time of 5 years from the date of filing Form 9-330 as required in 30 CFR 250.38(b), excluding the total of such time that operations and production are suspended by direction of the Secretary of the Interior or his duly authorized representative, and further excluding the total of such time that operations and production are stopped or prohibited by Court order, all information contained on this form shall be available except Item 37, Summary of Porous Zones, and Item 38, Geologic Markers. Within 90 days prior to the end of the 5-year period, exclusive of exceptions noted above, the lessee or operator shall file a Form 9-330 containing all information requested on the form, except Item 37, Summary of Porous Zones, and Item 38, Geological Markers, to be made available for public inspection. Objections to the release of such information may be submitted with the completed Form 9-330.

2.3 *Form 9-331—Sundry Notices and Report on Wells.*

2.3.1 *"Request for Approval to."* When used as a "Request for Approval to:" conduct operations, all information contained on this form shall be available except Item 4, Location of Well, at top production interval and at total depth, and Item 17, Describe Proposed or Completed Operations.

2.3.2 *"Subsequent Report of:"* When used as a "Subsequent Report of:" operations, and after commencement of production, all information contained on this form shall be available, except information under Item 17 as to subsurface locations and measured and true vertical depths for all markers and zones not placed on production.

2.4 *Form 9-331C—Application for Permit to Drill, Deepen, or Plug Back.* All information contained on this form and the attached location plat shall be available except Item 4, Location of Well at Proposed Production Zone, and Item 23, Proposed Casing and Cementing Program.

2.5 *Form 9-1869—Quarterly Oil-Well-Test Report.* All information contained on this form shall be available.

2.6 *Form 9-1870—Semi-Annual Gas-Well-Test Report.* All information contained on this form shall be available.

2.7 *Multi-point Back-Pressure-Test Report.* All information contained on this form used to report the results of required multi-point back-pressure-test of gas wells shall be available.

2.8 *Sales of Lease Production.* Information contained on monthly U.S. Geological Survey computer printout showing sales volumes, value, and royalty of production of oil, condensate, gas and liquid products by lease shall be made available.

2.9 *Availability of Inspection Records.* All accident-investigation reports, pollution-incident reports, facilities-inspection data, and records of enforcement actions are also available for public inspection.

2.10 *Availability of Data and Information Submitted by Lessees as a Requirement of OCS Orders and Notices.* It has been determined that much information submitted by lessees as a result of OCS Orders and OCS Notices to Lessees and Operators is non-proprietary in nature and will be made available for public inspection.

This will include:

a. Notices of support activity.

b. Oceanographic, meteorological, and performance data collected from drilling and production facilities during the period of operations.

c. Results of site surveys required prior to drilling or placement of structures except for those portions which the lessee shall designate, with the Supervisor's approval, as trade secrets and commercial or financial information which are privileged or confidential.

d. Drawings, maximum environmental-design criteria, and performance data of mobile-drilling units and structures.

e. Oil spill contingency plans.

f. Critical operations and curtailment plans.

3. *Information Exempt from Public Inspection.* The requirements of this paragraph are applicable to leases issued after June 11, 1976. It has been determined that certain information as discussed in paragraph 1 and subparagraphs 2.1 through 2.4 of this Order is exempt from disclosure under exemption No. 9 of the Freedom of Information Act (5 U.S.C. 552(b)(9) and 43 CFR 2.13 subparagraph (c) "Statutory Exemptions" (9)). This information has been determined to qualify as "Geographical and geophysical information and data including maps concerning wells." In accordance with 30 CFR 250.97, "Public Inspection of Records," subparagraph (a), geophysical data shall not be available for public inspection without the consent of the lessee so long as the lease remains in effect or for a period of 10 years after the date of submission, whichever is less, unless the Supervisor, with the approval of the Director, determines that earlier release of such information is necessary for the proper development of the field or area. Subparagraph (b) requires that geological data shall not be made available for public inspection without the consent of the lessee as long as the lease remains in effect or for a period of 2 years after the date of submission, whichever is less, unless the Supervisor, with the approval of the Director, determines that earlier release of such information is necessary for the proper development of the field or area.

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